AMENDMENTS TO THE CLAIMS

Claim 1 (currently amended): A circuit for a displacement detector having a sensor with a sensor coil forming ~~incorporating~~ a differential transformer, said circuit comprising:

driver means for generating a driving signal for driving said ~~differential transformer~~ sensor coil;

standard signal processing means for processing said driving signal and thereby outputting a standard signal;

output signal processing means for processing signals outputted from said differential transformer;

differential amplifier means for carrying out differential amplification of said standard signal and the output signal from said output signal processing means; and

amplitude adjusting means for adjusting the amplitude of said driving signal for said sensor coil to a constant value by feeding back said standard signal to said driver means.

Claim 2 (currently amended): The circuit of claim 1 wherein said amplitude adjusting means is provided with a standard value corresponding to the kind of said differential transformer and said constant value is determined according ~~too~~ to said standard value.

Claim 3 (original): The circuit of claim 1 wherein said standard signal processing means comprises a first amplifier circuit for amplifying driving signal and a first AC-DC converter circuit for converting the amplified driving signal into a first DC signal, said output signal processing means comprises a second amplifier circuit for amplifying the output signal from said differential transformer and a second AC-DC converter circuit for converting the amplified output signal into a second DC signal, and at least one of the pairs selected from the group consisting of the pair consisting of said first amplifier and said second amplifier and the pair consisting of said first AC-DC converter circuit and said second AC-DC converter circuit is thermally coupled.

Claim 4 (original): The circuit of claim 1 wherein said driver means outputs said driving signal with a DC bias superimposed, said displacement detector further comprising detecting means for detecting an abnormal condition according to the level of said DC bias.

Claim 5 (currently amended): A circuit for a displacement detector having a sensor with a sensor coil forming ~~incorporating~~ a differential transformer, said circuit comprising:

driver means for generating a driving signal for driving said ~~differential transformer~~ sensor coil;

standard signal processing means for processing said driving signal and thereby outputting a standard signal;

output signal processing means for processing signals outputted from said differential transformer;

amplitude adjusting means for adjusting the amplitude of said driving signal for said sensor coil to a constant value by feeding back said standard signal to said driver means, said amplitude adjusting means being provided with a standard value corresponding to the kind of said differential transformer; and

differential amplifier means for carrying out differential amplification of said standard ~~signal~~ value and the output signal from said output signal processing means.

Claims 6-17 (canceled)